What is claimed is:

1. A bone growth composition, comprising:

(a) a substrate;

(b) bone growth protein;

(c) a source of calcium; and,

(d) a source of phosphate,

wherein said composition has an acidic buffering potential in physiological solution.

2. A bone growth composition, comprising:

(a) a substrate;

(b) bone growth protein; and,

(c) a source of calcium,

wherein said composition has an acidic buffering potential in physiological solution.

3. A bone growth composition, comprising.

(a) a substrate;

(b) bone growth protein; and,

(c) a source of phosphate,

wherein said composition has an acidic buffering potential in physiological solution.

4. A bone growth composition as claimed in Claim 1, wherein the source of calcium is an acidic calcium phosphate salt.

5. A bone growth composition as claimed in Claim 4, wherein the source of calcium is selected from the group consisting of calcium monophosphate, calcium hydrogen phosphate, and calcium pyrophosphate.

6. A bone growth composition as claimed in Claim 1, wherein the source of phosphate is a sodium phosphate salt.

7. A bone growth composition as claimed in Claim 1, wherein the substrate is selected from the group consisting of collagen, fibrin, alginate and mixtures thereof.

8. A bone growth composition as claimed in Claim 1, wherein the bone growth protein is selected from the group consisting of purified bone growth factors, recombinantly produced bone growth factors and mixtures thereof.

9. A bone growth composition as claimed in Claim 8 wherein the bone growth protein comprises a transforming growth factor β (TGF-β) superfamily protein.

10. A bone growth composition as claimed in Claim 8 wherein the bone growth protein comprises Bone Protein.

11. A process for producing an implantable bone growth composition, comprising:

(a) producing a dispersion of collagen fibrils containing a solubilized sodium phosphate salt; and

(b) adding a calcium chloride salt to the dispersion of collagen fibrils to precipitate a calcium phosphate salt onto the surface of said collagen fibrils to produce an implantable bone growth composition.

12. The process of Claim 11, wherein said solubilized sodium phosphate salt is calcium hydrogen phosphate dihydrate and wherein said calcium phosphate salt is calcium dichloride dihydrate.

13. A process for producing an implantable bone growth composition, comprising:

(a) producing a dispersion of collagen fibrils containing a solubilized calcium chloride salt; and,

(b) adding a sodium phosphate salt to the dispersion of collagen fibrils to precipitate a calcium phosphate salt onto the surface of said collagen fibrils to produce an implantable bone growth composition.

14. The process of Claim 13, wherein said solubilized sodium phosphate salt is calcium hydrogen phosphate dihydrate and wherein said calcium phosphate salt is calcium dichloride dihydrate.

15. A process for the induction of bone formation in a mammal, comprising implanting a bone growth composition in said mammal, wherein said composition comprises,

(a) a substrate;

(b) bone growth protein;

(c) a source of calcium; and,

(d) a source of phosphate,

wherein said composition has an acidic buffering potential in physiological solution.

16. A process as claimed in Claim 15, wherein said source of calcium is an acidic calcium phosphate salt.

17. A process as claimed in Claim 16, wherein said acidic calcium phosphate salt is selected from the group consisting of calcium monophosphate, calcium hydrogen phosphate, and calcium pyrophosphate.

18. A process as claimed in Claim 15, wherein said source of phosphate is a sodium phosphate salt.

19. A process as claimed in Claim 15, wherein said substrate is selected from the group consisting of collagen, fibrin, alginate and mixtures thereof.

20. A bone growth composition as claimed in Claim 15, wherein the bone growth protein is selected from the group consisting of purified bone growth factors, recombinantly produced bone growth factors and mixtures thereof.

21. A bone growth composition as claimed in Claim 20 wherein the bone growth protein comprises a transforming growth factor β (TGF-β) superfamily protein.

22. A bone growth composition as claimed in Claim 20 wherein the bone growth protein comprises Bone Protein.

23. A process as claimed in Claim 15, wherein said process is a process selected from the group consisting of hip replacement operation, knee replacement operation, spinal fusion, repair of periodontal defects, treatment of osteoporosis, repair of bone defects and repair of bone fractures.